

THE CANON NATIONAL PARKS SCIENCE SCHOLARS PROGRAM

ANNOUNCEMENT & APPLICATION 2000

Introduction

The National Park System preserves a vast range of our country's natural and cultural heritage – national parks, battlefields, monuments, recreation areas, historic sites, seashores, wilderness areas, and more. From the Statue of Liberty to Yellowstone, from the Martin Luther King, Jr. National Historic Site to the Everglades, the National Park Service is charged with a dual mission: to provide these areas for enjoyment by the public and preserve them unimpaired for future generations. Critical to this effort is state-of-the-art scientific knowledge so that the National Park Service can wisely manage this collective heritage.

The Canon National Parks Science Scholars Program has a single goal: *to encourage the best and brightest graduate students in all relevant scientific disciplines to conduct research important to the future of the national parks.*

The objectives are to:

- encourage “young-to-the-field” scientists at the graduate level to engage in park-related research,
- conduct innovative research on issues central to the national parks, and
- encourage the use of parks as laboratories for science.

The Canon National Parks Science Scholars Program aims to develop the next generation of scientists working in the fields of conservation, environmental science, and park management. It is these scientists who will learn, discover, invent, and create solutions to preserve the National Park System in the 21st century.

The Program

The Canon National Parks Science Scholars Program is a collaboration among Canon U.S.A., Inc., the National Park Service, the National Park Foundation (the official non-profit partner of the National Park Service), and the American Association for the Advancement of Science (AAAS).

Each year, the program awards doctoral dissertation scholarships to support student research in the national parks. Awards are made in four broad discipline areas:

- biological sciences (such as botany or ecology),
- physical sciences (such as geology or atmospheric sciences),
- social sciences (such as economics or sociology), and
- cultural sciences (such as ethnography or archeology).



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AAAS AMERICAN ASSOCIATION FOR THE
ADVANCEMENT OF SCIENCE

The awards are based on an annual competition in each of the four discipline areas. Briefly, the program operates as follows:

- Students submit research proposals on specific research topics selected by NPS park managers.
- Student proposals are evaluated by scientific panels convened by the AAAS Directorate for Education and Human Resources Programs.
- The AAAS panels select the winning doctoral students who become Canon National Parks Science Scholars.
- The National Park Foundation transfers scholarship funds, provided by Canon U.S.A., Inc., to each student's university, providing for tuition, fieldwork, a stipend, and other expenses associated with each student's research.
- The students complete their graduate research, write a dissertation, prepare a popular article on the significance of the research, and give a public lecture about their work.

The 2000 Competition

In 2000, two Canon National Parks Science Scholars will be selected in each of the four discipline areas – biological, physical, social, and cultural sciences. An Honorable Mention will also be selected in each area. The 2000 competition is open to students:

- currently enrolled in a doctoral program in the United States,
- who have (or will soon have) completed their coursework, and
- who will have prepared a dissertation proposal approved by their faculty committee no later than 1 June 2000.

Each winning student will be awarded a Canon National Parks Science Scholarship of \$25,000 per year to complete his or her research, for a maximum of three years and \$75,000. Each Honorable Mention winner will receive a one-time scholarship of \$2,000.

Applications should be postmarked no later than 1 June 2000. Awardees will be announced shortly after 7 August 2000. Participants in the Canon National Parks Science Scholars Program can begin their supported research during the 2000 fall academic term.

The 2000 Research Topics

The 2000 competition is focused on four broad research topics important to the management of the National Park System. All proposals should address, in some way, one of the topics stated as a research question below.

Research can be conducted at a single site or at multiple sites throughout the National Park System.

Biological Sciences

What role do small parks play in the long-term viability of migratory species?

Migrating species such as fish, birds, bats, and butterflies require a diversity of habitats. Human fragmentation of ecosystems diminishes available habitat for migratory species, often limiting habitat to protected areas such as national parks. Many of these national parks are relatively small. Research is needed to understand how small parks (less than 8,000 acres in size) contribute to the long-term viability of migratory species. The results will be useful to park managers in managing existing parks, and planning for additional parks.

Physical Sciences

What physical resources and/or processes are most important to monitor, in order to evaluate ecosystem integrity in national parks?

Physical resources (such as air, water, bedrock, and solar radiation) and processes (such as drought, flood, freezing, landslide, and fire) are key components of ecosystems. Research is needed to identify what physical resources and/or processes are most critical to monitoring the status of ecosystem integrity in national parks. The results will assist park managers in developing monitoring systems critical to the long-term management of the national parks.

Social Sciences

How does the employment of specialists versus generalists impact the organizational effectiveness of the National Park Service?

The National Park Service is confronted with the need to “do more with less.” In addition, the range of duties and expertise required of NPS employees continues to grow. A dilemma exists for the agency – does it require generalists (with many responsibilities and broad training) or specialists (with narrower responsibilities and more in-depth training)? Research is needed to better understand how organizational strategies that emphasize employee specialization differ from strategies that emphasize generalization. The results will be useful in improving the effectiveness of the National Park Service as an organization.

Cultural Sciences

How does natural and/or prescribed fire affect the preservation of archeological resources?

Fire across a landscape can affect archeological materials both directly (due to combustion) and indirectly (due to heating, charring, and exposure). Research is needed to understand the effects of natural and/or prescribed fire on archeological materials. The results will be useful to park managers in balancing fire management and protection of archeological resources.

Frequently Asked Questions

1. Can someone not currently enrolled in a doctoral program submit a proposal?

The purpose of the Canon National Parks Science Scholars Program is to encourage doctoral students to conduct innovative research in the parks. The 2000 competition is open to all students currently enrolled in a U.S. university, working toward their Ph.D., and preparing to conduct their dissertation research.

2. Can a student submit a proposal on any topic in the biological, physical, social, and cultural sciences?

The National Park Service has selected specific topics that reflect important research needs. All proposals for the 2000 competition must address, in some way, one of these research topics. In future competitions, different topics will be selected in each of the four discipline areas.

3. Who will evaluate the proposals and select the winners?

The American Association for the Advancement of Science will convene a panel of scientists in each of the scientific fields represented by the 2000 research topics—four panels in all. Each scientist on a panel will read and evaluate all the proposals submitted to the panel. The panel will make the selections, and winners will be informed shortly after 7 August 2000.

4. What criteria will be used in evaluating the proposals?

The AAAS and the scientific panels will develop specific criteria for evaluating the proposals. General criteria include scientific merit, feasibility in a park setting, significance to park management, and the capacity of the student to successfully complete the research.

5. What can the scholarship funds be used for?

The scholarships can be used for tuition, books, fieldwork expenses (including research assistants), equipment needed to complete the research project, and a student stipend. Funds cannot be used to pay university overhead, faculty salary or honoraria, or travel to scientific meetings.

6. How will the scholarship funds be awarded?

The National Park Foundation will transfer the scholarship funds to each awardee's university. \$25,000 will be transferred to support the first year of research for each student. Upon receipt of a letter from the student's dissertation committee chair that confirms the student is making satisfactory progress, funds for the next year will be transferred from the National Park Foundation to the university.

7. How do I apply?

Eligible and interested students should complete an application packet and mail it to the Canon National Parks Science Scholars Program by the postmark deadline of 1 June 2000. Required materials include:

- a) the application cover sheet (both sides),
- b) a separate title page,
- c) the research proposal,
- d) a resume or vitae,
- e) official transcripts of all graduate coursework, and
- f) a letter of recommendation from the chair of the student's dissertation committee.

The application has specific instructions that should be followed carefully. Incomplete applications will not be evaluated.

8. When is the application deadline?

The completed application packet must be postmarked and mailed no later than 1 June 2000. Students will be notified that a completed application packet was received.



Application Instructions

Students must submit a complete application packet to be considered for the 2000 Canon National Parks Science Scholars Program. Please follow the instructions carefully. Submit five complete sets (one master with original signatures plus four copies) of the following items, organized in the following order:

- the application cover sheet (both sides),
- the proposal's title page,
- the proposal,
- a resume or vitae,
- official transcripts of graduate coursework, and
- a letter of recommendation from the dissertation committee chair.

Incomplete applications will not be forwarded to the AAAS for review. Additional materials that are not specifically requested in the following instructions will not be considered in the evaluation, and should not be included.

1. Application Cover Sheet

The application cover sheet must be completed and signed by the student and the chair of the student's dissertation committee. Use of a copy is acceptable.

2. Proposal Title Page

The title page should include the title of the research proposal, the specific 2000 research topic addressed by the proposal, the name and affiliation of the student, and the names and affiliations of all members of the student's dissertation committee.

3. The Proposal

The proposal can be the student's dissertation proposal or an adaptation of that proposal. In either case, it must be single-spaced, single-sided, and use 12 point or larger type. It must be no more than 10 pages in length, *including* references, bibliography, notes, graphs, maps, charts, tables, photographs, and other materials. Longer proposals will not be accepted.

The proposal should include a succinct discussion of a) the research problem, b) key relevant literature, c) theory (and hypotheses if appropriate), d) research methods (including data collection and interpretation of results), and e) a schedule for completion of the research and dissertation. The proposal should briefly describe the feasibility of the research methodology in the context of NPS resource protection and management policies. This

description should include the feasibility of obtaining needed research permits for collecting specimens, manipulating natural and/or cultural resources, or collecting information from park visitors. Proposals involving human subjects should include a signed approval form from the university.

4. Resume or Vitae

The resume or vitae should list all postsecondary education and work experience, as well as publications, presentations, and other scholarly activities. The resume or vitae should be single-spaced and single-sided.

5. Transcripts

Transcripts should be included for all graduate coursework, not just work at the student's current university. The first application set must contain official transcripts; the remaining four sets can contain copies of official or unofficial transcripts.

6. Letter of Recommendation

The chair of the student's dissertation committee is responsible for preparing a signed letter of recommendation. The letter should state that the student has a) completed all course work (or will soon do so), b) advanced to candidacy (if appropriate), c) successfully defended the dissertation proposal, and d) received the dissertation committee's approval to proceed with the research. In addition, the letter should evaluate the student's overall scholarly ability and capacity to successfully complete the proposed research.

7. Deadline

The completed application packet must be postmarked and mailed no later than 1 June 2000. Students will be notified that a completed application packet was received. The packet should be mailed to:

Dr. Gary E. Machlis, Program Coordinator
Canon National Parks Science Scholars Program
Natural Resource Stewardship and Science
National Park Service
1849 C Street, NW (MIB 3127)
Washington, D.C. 20240
Phone: 202.208.5391
E-mail: gmachlis@uidaho.edu

For more information, contact the Program Coordinator listed above.

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THE CANON NATIONAL PARKS SCIENCE SCHOLARS PROGRAM

APPLICATION COVER SHEET 2000

Student

Name _____

Mailing Address _____

City _____

State _____ Zip Code _____

Phone _____ E-mail _____

University currently attending _____

Department or College _____

The following materials should be attached (in order) to this cover sheet:

- the proposal's title page,
- the proposal,
- a resume or vitae,
- official transcripts of graduate coursework, and
- a letter of recommendation from the dissertation committee chair.

Dissertation Committee Chair

Name _____

Mailing Address _____

City _____

State _____ Zip Code _____

Phone _____ E-mail _____

Department or College _____

Please submit a completed application packet (see detailed instructions in the program announcement) to the address below, postmarked no later than 1 June 2000.

Dr. Gary E. Machlis
Program Coordinator
Canon National Parks Science
Scholars Program
Natural Resource Stewardship
and Science
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Washington, D.C. 20240
Phone: 202.208.5391
E-mail: gmachlis@uidaho.edu

Proposal

Which of the *2000 Research Topics* does your proposal address? _____

Title of Dissertation Proposal _____

Expected year of completion _____



Project Summary

(not to exceed 200 words)

Signatures

Signature of Student _____ Date _____

Signature of Chair of Dissertation Committee _____ Date _____

For More Information

For more information on the Canon National Parks Science Scholars Program or to receive a 2000 program announcement, contact the Program Coordinator at the address on the front of this form.

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